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usually defined. Hence in the treatment of genera a somewhat intermediate course has been followed.

In the interpretation and definition of species the work is conservative; in fact many of the recently proposed Rocky Mountain species have been reduced to synonomy. All categories subordinate to the species are treated uniformly under the trinomial, without further indication as to the supposed relationship to species; and it is only in the summary that we learn incidentally these are all regarded as varieties. The flora contains according to the summary given 116 families, 649 genera, 2733 species, and 186 varieties. This is by no means an excessive number for such a diversified region. A "list of new names and combinations" is also appended, which totals 169. Some of these combinations seem scarcely justifiable; for example, "*Krigia virginica* (L.) A. Nels." This is a name taken up for *K. amplexicaulis* Nutt. apparently on the basis of absolute priority, but which is in direct violation of section 7, article 53, of the International Rules of Botanical Nomenclature. A very complete and convenient index, including scientific and common names, arranged similar to that of the seventh edition of GRAY'S *Manual*, concludes the volume.

The press work is excellent, and there are comparatively few typographical errors. On page 529, under *Erigeron ramosus*, the date of publication for the *Preliminary catalogue*, etc., is given as "1788," a mere typographical error for 1888. On the whole the revised edition gives a concise, reasonably complete, inexpensive, and in general conservative treatise on the flora of a region which is always fascinating to the naturalist; and the clear-cut keys, and brief and lucid descriptions render the book particularly well adapted for the field identification of species. The botanical public is to be congratulated on having the revision of this well-known manual made by one whose continued activities in the field and extended knowledge of the Rocky Mountain flora have peculiarly fitted him for the work in hand.—J. M. GREENMAN.

NOTES FOR STUDENTS

Current taxonomic literature.—O. AMES (Phil. Journ. Sci. Bot. **4**:593–600. 1909) under the title "Notes on Philippine orchids with descriptions of new species I" gives critical notes on several known orchidaceous plants and describes 3 species hitherto unknown.—O. BECCARI (*ibid.* 601–639. *pls. 30, 31*) has published, as new, 20 species and 7 varieties of Philippine palms.—W. BECKER (Beih. Bot. Centralbl. **26**:1–44. 1909) has issued the first of a series of articles on the taxonomy of European violets.—A. CHEVALIER (Journ. Bot. **22**:112–128. 1909) under the title "Diagnoses plantarum Africae" has published several new species of flowering plants, including a new genus (*Leocus*) of the Labiatae.—H. CHRIST (Journ. Linn. Soc. **39**:213–215. 1909) describes new species of ferns, 2 of which are from the Philippines.—C. CHRISTENSEN (Bot. Tidsskr. **29**:291–304. *figs. 15.* 1909) has published a new genus (*Stigmatopteris*) of ferns, based on *Polypodium flavopunctatum* Kaulf. (*Aspidium rotundatum* Willd.) and refers thereto 12 species from tropical America.—W. W. EGGLESTON (Bull. Torr. Bot.

Club **36**:639–642. 1909) describes 3 new species of North American Crataegi.—F. Eichlam (Monats. Kakteenk. **19**:177–180. 1909) has described a new species of Cereus (*C. lepidanthus*) from Guatemala.—A. D. E. Elmer (Leafl. Philip. Bot. **2**:631, 632. 1909) proposes a new species of Grewia (*G. negrosensis*) from the Philippine Islands.—A. J. Ewart, J. White, and B. Rees (Proc. Roy. Soc. Victoria **22**:6–23. *pls. 3–10.* 1909) under "Contributions to the flora of Australia, no. 11," have published several new species, referred to different genera, and include a new genus (*Gilruthia*) of the Compositae.—C. Ferdinandsen and O. Winge (Bot. Tidsskr. **29**:317–319. *figs. 6–8.* 1909) have published 3 new American species of fungi.—M. Gandoger (Bull. Soc. Bot. Fr. IV. **9**:458–464. 1909) under the title "Les Anthurium de l'Ecuador" gives a conspectus of the known Ecuadorian species and publishes one species new to science.—R. R. Gates (Rep. Mo. Bot. Gard. **20**:123–137. 1909) presents a very useful analytical key to some of the segregates of Oenothera; the key is supplemented by a bibliography and descriptive notes.—D. Griffiths (*ibid.* 81–95. *pls. 2–13*) under "Illustrated studies in the genus Opuntia II" describes 11 new species from southwestern United States.—L. S. Gibbs (Journ. Linn. Soc. **39**:130–212. *pls. 11–16.* 1909) in cooperation with several specialists contributes an important article on the montane flora of the Fiji Archipelago; the paper includes a number of species new to science.—E. L. Greene (Muhlenbergia **6**:1–3. 1910) has described 3 new species of Eriogonum from southwestern United States.—A. E. Grobéty (Bull. Soc. Bot. Genève II. **1**:357, 358. 1909) proposes a new genus (*Ourococcus*) of the green algae, based on *Dactylococcus bicaudatus* A. Braun.—E. Hackel (Rep. Nov. Sp. **7**:311–327. 1909) under the title "Gramineae novae VI" has published 17 new species of grasses, chiefly from South America; one genus (*Schizachne*) is new to science.—E. Hackel and E. Hassler (*ibid.* 369–383) under the title "Ex herbario Hassleriano: Novitates paraguariensis III" have described new species and varieties in the Gramineae, Rosaceae, and Malvaceae.—T. Herzog (*ibid.* 354–359), supplementing a recent article on new siphonogamous plants from Bolivia, has published 6 additional species; the same author (Beih. Bot. Centralbl. **26**:45–102. *pls. 1–3.* 1909) has published 73 new species of mosses from Bolivia, and proposes three new genera (*Polymerodon*, *Simplicidens*, and *Wollnya*).—A. A. Heller (Muhlenbergia **5**:145–153. *pls. 4, 5.* 1909) presents a second article on the "Nevada lupines," including a description and illustration of one new species.—A. W. Hill (Journ. Linn. Soc. **39**:216–230. 1909) gives a synopsis of the "Acaulescent species of Malvastrum," recognizing 18 species of which 5 from South America are new to science.—E. Janchen (Mitt. Naturwis. Ver. Univ. Wien **7**:1–124. 1909) has published a monographic treatment of the Cistaceae of Austria-Hungary, recognizing four genera, as follows: Cistus (4 species), Tuberaria (1 species), Helianthemum (11 species), and Fumana (5 species); bibliography and synonomy are given in detail.—M. E. Jones (Contr. West. Bot. no. 13. pp. 1–16. 1910) under the heading "New species and notes" characterizes 15 new species and 9 new varieties of flowering plants from western United States.—C. H. Kaufman (Rep. Mich. Acad. Sci. **11**:55–91. *figs. 3.* 1909) records a list of fungi new to the state and gives a mongraphic treatment of the Michigan representation of Russula, in which 56 species are recognized, 5 being described as new to science.—N. C. KINDBERG (Ottawa Nat. **23**:180–191. 1910) in continuation of his studies on Canadian bryology records several species of mosses, as either new or noteworthy, from Canada.—M. BOULY DE LESDAIN (Bull. Soc. Bot. Fr. IV. **9**:473–477. 1909) has published 8 new species of lichens from Mexico and Peru.—G. MASSEE (Kew Bull. 1–6. *figs. 21.* 1910) has published several new species of fungi, 7 being from the West Indies. A new genus (*Hartiella*) of the Hyphomycetaceae is described from Trinidad; the fungus is parasitic on shells of the cacao pod.—E. D. MERRILL (Phil. Journ. Sci. Bot. **4**:641–650. 1909) has published a "Preliminary revision of Philippine Combretaceae," in which he recognizes four genera represented by 18 species; one new species of Terminalia is described.—W. A. MURRILL (Mycologia **2**:25, 26. 1910) describes a new phalloid genus (*Protophallus*) from Jamaica.—A. PASCHER (Ber. Deutsch. Bot. Gesell. **27**:555–562. *pl. 20.* 1909) describes and illustrates a new genus (*Pyramidochrysis*) of the Chromulinaceae; two species are recorded; both are found in stagnant water near Mugrau in southern Bohemia.—L. QUEHL (Monats. Kakteenk. **19**:188–189. 1909) describes a new species of Mamillaria (*M. pseudoperbella*) from Mexico.—A. REHDER (Rhodora **12**:1–3. 1910) records several noteworthy forms of *Kalmia latifolia.*—H. REHM (Ann. Mycol. **7**:524–542. 1909) has published several new species of Ascomycetes, 13 being from North America and 20 from South America; two new Brazilian genera are proposed, namely *Dictyomollisia* and *Phaeofabraea.*—J. F. ROCK (Bull. Torr. Bot. Club **36**:645, 646. 1909) describes and illustrates a new species of Scaveola from the Hawaiian Islands.—R. ROLAND-GOSSELIN (Rev. Hort. Paris **82**:28, 29. *fig. 8.* 1910) has published a new species of Cereus (*C. tricostatus*) which has been introduced into cultivation from Mexico.—R. A. ROLFE (Kew Bull. 364–368. 1909) has published several new species of orchids, of which 4 are from South America. —J. N. ROSE and J. A. PURPUS (Contr. U. S. Nat. Herb. **13**:45, 46. *pls. 10–14.* 1910) have described 3 new species of Echeveria from Mexico.—E. ROSENSTOCK (Rep. Nov. Sp. **7**:289–310. 1909) has published 38 new species and varieties of ferns. These species are based on collections made by Mr. R. SPRUCE in the region of the Amazon, in eastern Peru, and in Ecuador.—P. A. RYDBERG (Bull. Torr. Bot. Club **36**:675–698. 1909) under "Studies on the Rocky Mountain flora XX" has described several new species of sympetalous plants.—F. GRAF VON SCHWERIN (Mitt. Deutsch. Dendr. Gesell. 1–56. 1909) presents a monograph of the genus Sambucus, in which 21 species and numerous varieties are recognized; the text is accompanied by numerous illustrations and distribution-maps. —T. A. SPRAGUE (Kew Bull. 362–364. 1909) gives a synopsis of the American species of Microtropis, recognizing 5 species from Mexico and Central America, 2 being new to science.—F. THEISEN (Broteria Bot. Ser. **8**:53–65. *pls. 1–6.* 1909) under the title "Marasmii austro-brasilienses" enumerates 38 species of Marasmium, including 2 new species and 8 new varieties.—E. A. WAINIO (Phil. Journ. Sci. Bot. **4**:651–662. 1909) under the heading "Lichenes insularum philippinarum I" records 10 species and several varieties as new to science.—F. A. WOLF (Mycologia **2**:19–22. *pl. 18*. 1901) has published a new species of Fusarium, parasitic on *Viola tricolor*.—H. WOLFF (Rep. Nov. Sp. **7**:345, 346. 1909) has published a new species of Eryngium (*E. affine*) from Costa Rica.—C. H. WRIGHT (Kew Bull. 24. 1910) describes a new species of Urceocharis from Peru.—Different authors (*ibid.* 357–362. 1909) under the heading "Decades kewensis LIV" have published a number of new species of flowering plants, including a new genus (*Micholtzia*) of the Asclepiadaceae from India; also a new genus (*Ennealophus*) of the Iridaceae from Brazil.—J. M. GREENMAN.

A new genus of chytrids.—A minute organism parasitic in the leaf blades and petioles of the ragweed (*Ambrosia artemisiaefolia*) is described by GRIGGS[3] as a new genus. The swarm spores perforate the cell wall and enter the cells (epidermal, hypodermal, or chlorenchymal), sometimes in large numbers, where they present amoeboid forms within the plasma of the host. Some of the "amoebulae" unite in pairs by the fusion of their plasma while the nuclei remain distinct. This minute amoeboid zygote grows to form a binucleate resting spore which at maturity is provided with a stout exospore wall. The germination has not been studied. Other swarm spores, in the same or other cells, grow to form zoosporangia about 70 μ in diameter, showing also amoeboid movements in the vegetative stage. The nucleus of the young "amoebula" which is to form a zoosporangium is said to "fragment" into four nuclei at an early stage. Since the figure given presents just as much evidence that the four nuclei are derived by mitotic division as by fragmentation, it would be interesting to know if this is the period of meiosis. A rather extended period then follows before further successive division of these four nuclei to form the zoospores, which are 2.5 μ. The author saw no mitotic figures, but states that in some cases at least there is evidence that the nuclei fragment. The formation and escape of the zoospores was not observed, and he does not know whether the zoospores are ciliate or amoeboid, the latter he thinks more likely. Since the escape of the zoospores was not observed, he does not know whether or not an exit tube is formed from the sporangium. The species, which he names *M. stevensianum*, is associated with *Rhodochytrium spilanthides*, and while the infected cells increase greatly in size, very little deformity of the host occurs, although large numbers of cells in a limited area are affected.

Some of the speculations appear to be based on a misinterpretation of some statements of the reviewer in regard to the behavior of the zoospores of Rhizophidium, for he says: "ATKINSON has shown that when liberated inside the sporangium the zoospores swim actively forward until they strike the wall of the sporangium, when the flagella are retracted and the zoöspore puts out pseudopodia by which it gropes for the opening of the sporangium. In case it is located too far from the ostiole to reach it with its pseudopodia, it resumes its flagellate form and

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[3] GRIGGS, R. F., Monochytrium, a new genus of the Chytridiales, its life history and cytology. Ohio Nat. **10**:44–54. *pls. 3, 4*. 1910.